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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
O HERN, BRENT T	
ART UNIT	**PAPER NUMBER**
1783	

NOTIFICATION DATE	DELIVERY MODE
12/08/2010	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/584,321	JAMES ET AL.	
	Examiner	Art Unit	
	BRENT T. O'HERN	1783	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10/27/2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6,8-10 and 13-18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6,8-10 and 13-18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claims

1. Claims 1-6, 8-10 and 13-18 are pending.

WITHDRAWN OBJECTIONS

2. All objections of record in the Office action mailed 7/29/2010 have been withdrawn due to Applicant's amendments in the Paper filed 10/27/2010.

REPEATED REJECTIONS

3. All rejections of record in the Office action mailed 7/29/2010 have been repeated for the reasons of record in the Office action mailed 7/29/2010. The rejections are repeated below.

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 103

5. Claims 1-3, 8, 10, 13-14 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Heikonen (EP 0 335 242) in view of Hei et al. (US 2002/0168422) and McNeff et al. (US 2005/0048176).

Regarding claims 1-2, 13-14 and 16, Heikonen ('242) teaches a process for the disinfection and/or preservation of harvested plant material which is animal feed selected from the group of harvested grass, cereals and maize *(See Abstract, p. 3, ll. 27-49, p. 5, l. 49 to p. 7, l. 41 and claims 1 and 6.)*, the process comprising contacting the harvested plant material with a liquid composition comprising at least one peroxygen compound *(See Abstract and claim 1, hydrogen peroxide.)* and a formic acid

preservative *(See Abstract, p. 3, ll. 27-49, p. 5, l. 49 to p. 7, l. 41 and claims 1 and 6.)*, however, fails to expressly disclose wherein the preservative is selected from the group of benzoic acid, parahydroxybenzoic acid, their salts, and mixtures thereof or the benzoic acid salt sodium benzoate.

Hei ('422) teaches alternatively treating a harvested plant material with a preservative comprising formic acid or benzoic acid *(See paras. 22, 24, 35 and 111-114.)* for the purpose of providing harvested plant material with the desired microbial protection *(See paras. 22, 24 and 111-112.)*.

McNeff ('176) teaches adding alternative chemical preservatives such as benzoic acid, formic acid and sodium benzoate *(See para. 7.)* and hydrogen peroxide *(See para. 11 and Abstract.)* to animal feed to extend the shelf life of livestock feed *(See paras. 7 and 11 and Abstract.)*.

Therefore, it would have been obvious to alternatively use benzoic acid as taught by Hei ('422) and McNeff ('176) or sodium benzoate as taught by McNeff ('176) instead of the formic acid in Heikonen ('242) in order to provide a harvested plant material with an extended shelf life having the desired microbial protection.

Regarding claim 3, Heikonen ('242) teaches wherein the peroxygen compound is hydrogen peroxide *(See Abstract and claims 1 and 6.)*.

Regarding claim 8, Heikonen ('242) teaches wherein the liquid composition is used in an amount of from 0.5 to 10 liters per ton of plant material *(See col. 6, l. 50 to col. 7, l. 41 where the amount is 5 liters per ton.)*.

Regarding claim 10, Heikonen ('242) teaches wherein the liquid composition has a pH of from 1 to 7 *(See p. 6, l. 35 and claim 2 where the pH of the fresh, newly harvested fodder is 4.5 or less.)*.

6. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Heikonen (EP 0 335 242) in view of Hei et al. (US 2002/0168422), McNeff et al. (US 2005/0048176) and Koenig et al. (US 2002/0169149).

Heikonen ('242), Hei ('422) and McNeff ('176) teach the process discussed above, however, fail to expressly disclose wherein the preservative is selected from the group consisting of parahydroxybenzoic acid, parahydroxybenzoic acid salts, and mixtures thereof.

Koenig ('149) teaches that parahydroxybenzoic acid, benzoic acid, formic acid and their salts are known alternative antimicrobials *(See para. 36.)*.

Therefore it would have been obvious to substitute Heikonen's ('242) formic acid preservative by the parahydroxybenzoic acid preservative as taught by Koenig ('149) in order to provide an animal feed with a longer shelf life.

7. Claims 5-6, 15, 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Heikonen (EP 0 335 242) in view of Hei et al. (US 2002/0168422), McNeff et al. (US 2005/0048176) and Rossmoore (Ch. 11.5, pl. 320, Handbook of Biocide Preservative Use, Springer, 1995.).

Regarding claims 5, 15 and 17, Heikonen ('242), Hei ('422) and McNeff ('176) teach the method discussed above, and Heikonen ('242) teaches where the amount is 5 liters per ton *(See col. 6, l. 50 to col. 7, l. 41.)* and the pH of the fresh, newly harvested

fodder is 4.5 or less *(See p. 6, l. 35 and claim 2.),* however, fail to expressly disclose wherein the liquid composition comprises from 5 to 60 % wt of the peroxygen compound and from 5 to 25 % wt of the preservative and a molar ratio of peroxygen compound to preservative of 0.2-5.

Rossmoore teaches that an aqueous mixture of acid and hydrogen peroxide will produce a disinfectant composition, where the equilibrium of acid, hydrogen peroxide and water are commonly known disinfectants used in the food industry *(See p. 320.)*.

Regarding the wt% and molar ratio as claimed, the Examiner points out in view of Rossmoore that it is known in the art that disinfecting solutions containing 4-5% or 15% acid, about 85-96% of the remaining solution will be comprised of acid, hydrogen peroxide and water.

Therefore, the Examiner takes the position that disinfectant solutions of acid and hydrogen peroxide present in the wt% ranges and molar ratio as claimed by the Applicant are known in the art of food grade disinfectants as taught by Rossmoore.

Therefore, it would have been obvious at the time of Applicant's invention to one having ordinary skill in the art to modify the liquid composition as disclosed by Heikonen ('242), because Heikonen ('242) and Hei ('422) teach that this substitution of one known organic acid for another that such microbial solutions are oxidizing solutions that rapidly disinfect, where Rossmoore and Hei ('422) teach acids and peroxide disinfecting solutions are known in the art as commercially available solutions and are safe for food applications and typically contain concentrations of each agent in a wt % range and molar ratio that meets the limitations as claimed.

Regarding claims 6 and 18, Hei ('422) teaches the process discussed above, however, does not expressly teach the preservative is sodium benzoate. However, McNeff ('176), as discussed above, teaches that it is known to add chemical preservatives such as sodium benzoate *(See para. 7.)* and hydrogen peroxide *(See para. 11 and Abstract.)* to animal feed to extend the shelf life of livestock feed *(See paras. 7 and 11 and Abstract.)*.

8. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Heikonen (EP 0 335 242) in view of Hei et al. (US 2002/0168422), McNeff et al. (US 2005/0048176) and Nakanish (US 3,784,699).

Heikonen (242), Hei ('422) and McNeff ('176) teach the process discussed above, however, fail to expressly disclose wherein the liquid composition is used in an amount of from 1 to 3 liters per ton of plant material.

As discussed above, Heikonen ('242) teaches the liquid composition being applied in an amount of 5 liters per ton of plant material *(See col. 6, l. 50 to col. 7, l. 41.)*. The Examiner takes the position that the level and completeness of disinfection of the food material will depend both on the type of plant material and the liquid composition, concentration and the pH of the chemical agents, in the liquid solution and further the dilution of the concentrated liquid solution used.

Nakanish ('699) teaches the addition of benzoic acid and its salts in combination with other disinfectants or preservatives such as sorbic acid, acetic acid and its derivatives, and hydrogen peroxide *(See col. 1, ll. 22-26 and col. 2, ll. 54-71.)* and that when an antimicrobial agent is added to food *(See col. 2, ll. 21-41.)*, it must have low

toxicity to humans and/or animals and should have no adverse effect upon the flavor of the foods at the levels at which they are employed *(See col. 1, ll. 60-64.)*.

Therefore, it would have been obvious at the time of Applicant's invention to modify the process of Heikonen ('242) by adjusting the amount of the liquid composition used to treat the plant material because the addition of such agents to food for human or animal consumption must be in an amount that has no adverse effect upon the flavor of the foods and present little to no toxicity, and thus the level of the ordinary skill to modify such parameters to find the optimal range amount of the solution that will achieve maximal disinfection with minimal waste of the agents while simultaneously preserving the food quality and safety for consumption *(See also MPEP 2144.05.)*.

ANSWERS TO APPLICANT'S ARGUMENTS

9. In response to Applicant's arguments *(See p. 5, para. 4 of Applicant's Paper filed 10/27/2010.)* that it would not have been obvious to replace Heikonen's formic acid Hei's benzoic acid because Heikonen's material requires a pH of 3.0-4.0 and the benzoic acid taught by Hei can not provide a highly acidic pH because the pH of benzoic acid is only 4.2, it is noted that said arguments are not persuasive. Heikonen does not state the highest pH is 4.0 but rather states the pH should be below 4.5 *(See Abstract and claim 2.)*. The maximum pH is 4.5 and not 4.0, thus, benzoic acid with a pH of 4.2 and formic acid with a pH of 3.77 are below the maximum pH of 4.5. As discussed above, Hei teaches alternatively treating a harvested plant material with a preservative comprising formic acid or benzoic acid *(See paras. 22, 24, 35 and 111-*

114.). McNeff also teaches adding alternative chemical preservatives such as benzoic acid, formic acid and sodium benzoate *(See para. 7.).*

10. In response to Applicant's arguments *(See p. 6, para. 1 of Applicant's Paper filed 10/27/2010.)* that it would not have been obvious to replace Heikonen's formic acid with benzoic acid as taught by McNeff because the preservative in McNeff is not a preservative, it is noted that said arguments are not persuasive. McNeff teaches adding alternative chemical preservatives such as benzoic acid, formic acid and sodium benzoate *(See para. 7.).* Applicant does not precisely address these cited teachings.

11. In response to Applicant's arguments *(See p. 6, para. 1 of Applicant's Paper filed 10/27/2010.)* that McNeff teaches replacing preservatives like benzoic acid with hydrogen peroxide, it is noted that said arguments are not persuasive. McNeff does not state that benzoic acid should not be used but rather states that it has discovered a new alternative preservative.

12. In response to Applicant's arguments *(See p. 6, para. 2 of Applicant's Paper filed 10/27/2010.)* that Koenig teaches preservatives that are not equivalent to formic acid in Heikonen in function or effect, it is noted that said arguments are not persuasive. Koenig teaches the same formic acid *(See para. 36.)* as taught by Heikonen and the same alternative benzoic acid and formic acid *(See para. 36.)* as taught by Hei and McNeff and teaches the alternative antimicrobial parahydroxybenzoic acid *(See para. 36.)*. Thus, it would have been obvious to substitute these alternative antimicrobials as all of them function in substantially similar ways.

13. In response to Applicant's arguments *(See p. 6, para. 2 of Applicant's Paper filed 10/27/2010.)* that Rossmore and Nakanish are not pertinent to the deficiencies of the other references, it is noted that said arguments are not persuasive. As discussed above, Rossmoore teaches that an aqueous mixture of acid and hydrogen peroxide will produce a disinfectant composition, where the equilibrium of acid, hydrogen peroxide and water are commonly known disinfectants used in the food industry *(See p. 320.)*. Nakanish teaches the addition of benzoic acid and its salts in combination with other disinfectants or preservatives such as sorbic acid, acetic acid and its derivatives, and hydrogen peroxide *(See col. 1, ll. 22-26 and col. 2, ll. 54-71.)* and that when an antimicrobial agent is added to food *(See col. 2, ll. 21-41.)*, it must have low toxicity to humans and/or animals and should have no adverse effect upon the flavor of the foods at the levels at which they are employed *(See col. 1, ll. 60-64.)*. Applicant does not precisely address the teachings of these references.

14. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to BRENT T. O'HERN whose telephone number is (571)272-6385. The examiner can normally be reached on Monday-Thursday, 9:00-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Sample can be reached on (571) 272-1376. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/BRENT T O'HERN/
Examiner, Art Unit 1783
November 12, 2010